

Amendment

Reply to Office Action dated September 25, 2006

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Cancelled)

2. (Currently amended) An apparatus for treating wastewater using a contact medium, comprising:

a wastewater ~~collection~~ collecting tank (15) for collecting the wastewater;

a biofilm contact reactor (13) having:

a plurality of collecting hoppers each connected to a pipe which receives the wastewater, to perform, in the following order, an operation, water collection, and a discharge;

a single biofilm contact layer or including a plurality of alternating first and second biofilm contact layers, (2 and 3) alternately arranged vertically or horizontally in [[a]] each collecting hopper (4);

an intermediate diaphragm adjacent the biofilm contact layer or layers, the intermediate diaphragm including a plurality of discharging holes at one side thereof, the plurality of discharging holes having plate or ball shaped exteriors; and

contact media attached above and below the intermediate diaphragm and including flowing fibrous-type biofilm media, wherein the contact media is installed in such a way that one end thereof is soaked with the wastewater in the collecting hopper;

a precipitator (9) for receiving the wastewater from the wastewater collection tank (15) and the first-treated wastewater from the collecting hopper, (4) the precipitator being connected to the wastewater collection tank and a nitrogen/phosphorous treatment tank for selectively treating nitrogen and phosphorous, the precipitator including an overflow tank with an overflow

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wall over which decant water flows, which is connected to the nitrogen/phosphorous treatment tank, and then precipitating sludge contained in the wastewater; and

a wastewater circulation unit (11) for recycling decant water in collected by the overflow tank from the precipitator (9) and collected from the wastewater collection tank (15) back into the biofilm reactor, (13)

wherein each collecting hopper includes:

a plurality of nozzles for spraying wastewater supplied from first and second circulation pipes at the top of the hopper;

a spray control valve for adjusting the spray amount of the wastewater at the bottom of the hopper; and

a bypass unit formed therethrough at a designated height.

3-5. (Cancelled)

6. (Currently amended) The apparatus as set forth in claim 2, wherein the collecting hopper (4) includes a titanium reactor installed at the top or bottom thereof; and[,] and an ultraviolet ray lamp installed above the titanium reactor

wherein the titanium reactor includes a porous plate, on which a thin titanium film forms, and balls with a diameter of 3-5 mm at the inside thereof, in which the balls form a thin titanium film.

7-8. (Cancelled)